WE CLAIM:

1. A process comprising:

introducing a carbonaceous raw material, water and oxygen into a syngas generator under syngas forming operating conditions to form a syngas;

iintroducing a portion of the syngas into a Fischer-Tropsch reactor and forming primarily aliphatic hydrocarbons and carbon dioxide;

separating liquid hydrocarbons from the carbon dioxide, unconverted carbon monoxide, and hydrogen, which are Fischer-Tropsch tail gases;

introducing a portion of the syngas along with water and the Fischer-Tropsch tail gases into a water-gas-shift reactor to produce primarily hydrogen and carbon dioxide;

scrubbing the carbon dioxide from gases emitted from the shift reactor using a CO_2 scrubber;

collecting the carbon dioxide for sale or sequestration; and

burning the gases rich in hydrogen from the CO_2 scrubber in a gas turbine combustor of a combined cycle plant to drive a generator mechanically coupled to the gas turbine during a production of electricity.

2. The process of claim 1, wherein said syngas forming operating conditions comprise a syngas generator temperature operating from about 2400°F to about 2700°F.

3. The process of claim 1 further comprising desulfurizing the syngas before it enters the Fischer-Tropsch reactor.

4. The process of claim 1, wherein the gas turbine produces a stack gas having a low CO_2 content.

5. The process of claim 1 further comprising a catalyst of unsupported precipitated iron to be used in the Fischer-Tropsch reactor.

6. The process of claim 5, wherein the Fischer-Tropsch catalyst is doped with potassium and copper.

7. The process of claim 6, wherein the weight ratio of potassium to iron in the catalyst is between about 0.007 and about 0.010.

8. The process of claim 6, wherein the weight ratio of copper to iron in the catalyst is between about 0..005 and about 0.015.

9. A process comprising:

separating oxygen from nitrogen from the air in an air separation unit;

introducing a carbonaceous raw material, water and oxygen from the air separation unit into a syngas generator under syngas forming operating conditions to form syngas;

introducing a portion of the syngas into a Fischer-Tropsch reactor and forming primarily aliphatic hydrocarbons and carbon dioxide;

separating liquid hydrocarbons from the carbon dioxide, unconverted carbon monoxide, and hydrogen of Fischer-Tropsch tail gases;

introducing a portion of the syngas along with water and the Fischer-Tropsch tail gases into a water-gas-shift reactor to produce primarily hydrogen and carbon dioxide;

scrubbing the carbon dioxide from effluent from the shift reactor using a CO_2 scrubber;

collecting the carbon dioxide for sale or sequestration; and

burning the gases rich in hydrogen from the CO_2 scrubber in a gas turbine combustor of a combined cycle plant to drive a generator mechanically coupled to the gas turbine during a production of electricity.

10. The process of claim 9, wherein said syngas forming operating conditions comprise a syngas generator temperature operating from about 2400°F to about 2700°F.

11. The process of claim 9 further comprising desulfurizing the syngas before it enters the Fischer-Tropsch reactor.

12. The process of claim 9, wherein the gas turbine produces a stack gas having a low CO_2 content.

13. The process of claim 9 further comprising a catalyst of unsupported precipitated iron to be used in the Fischer-Tropsch reactor.

14. The process of claim 13, wherein the Fischer-Tropsch catalyst is doped with potassium and copper.

15. The process of claim 14, wherein the weight ratio of potassium to iron in the catalyst is between about 0.007 and about 0.010.

16. The process of claim 14, wherein the weight ratio of potassium to iron in the catalyst is between about 0.005 and about 0.015.

17. A process comprising:

separating oxygen from nitrogen from the air in an air separation unit;

introducing a carbonaceous raw material, water and oxygen from the air separation unit into a syngas generator under syngas forming operating conditions to form syngas;

introducing a portion of the syngas into a Fischer-Tropsch reactor having an iron-based catalyst, and forming primarily aliphatic hydrocarbons and carbon dioxide;

separating liquid hydrocarbons from the carbon dioxide, unconverted carbon monoxide, and hydrogen, which are Fischer-Tropsch tail gases;

introducing a portion of the syngas along with water and the Fischer-Tropsch tail gases into a water-gas-shift reactor to produce primarily hydrogen and carbon dioxide;

scrubbing the carbon dioxide from gases emitted from the shift reactor using a CO_2 scrubber;

collecting the carbon dioxide for sale or sequestration; and

burning the gases rich in hydrogen from the CO_2 scrubber in a gas turbine combustor of a combined cycle plant to drive a generator mechanically coupled to the gas turbine during a production of electricity.

18. The process of claim 17, wherein said syngas forming operating conditions comprise a syngas generator temperature operating from about 2400°F to about 2700°F.

19. The process of claim 17 further comprising desulfurizing the syngas before it enters the Fischer-Tropsch reactor.

20. The process of claim 17, wherein the gas turbine produces a stack gas having a low CO_2 content.

21. The process of claim 17, wherein the catalyst to be used in the Fischer-Tropsch reactor is unsupported precipitated iron.

22. The process of claim 21, wherein the Fischer-Tropsch catalyst is doped with potassium and copper.

23. The process of claim 22, wherein the weight ratio of potassium to iron in the catalyst is between about 0.007 and about 0.010.

24. The process of claim 22, wherein the weight ratio of copper to iron in the catalyst is between about 0.005 and about 0.015.